Available Transfer Capability (ATC) on BPA's Internal Paths

Non-Wires Solutions Roundtable

November 21, 2003

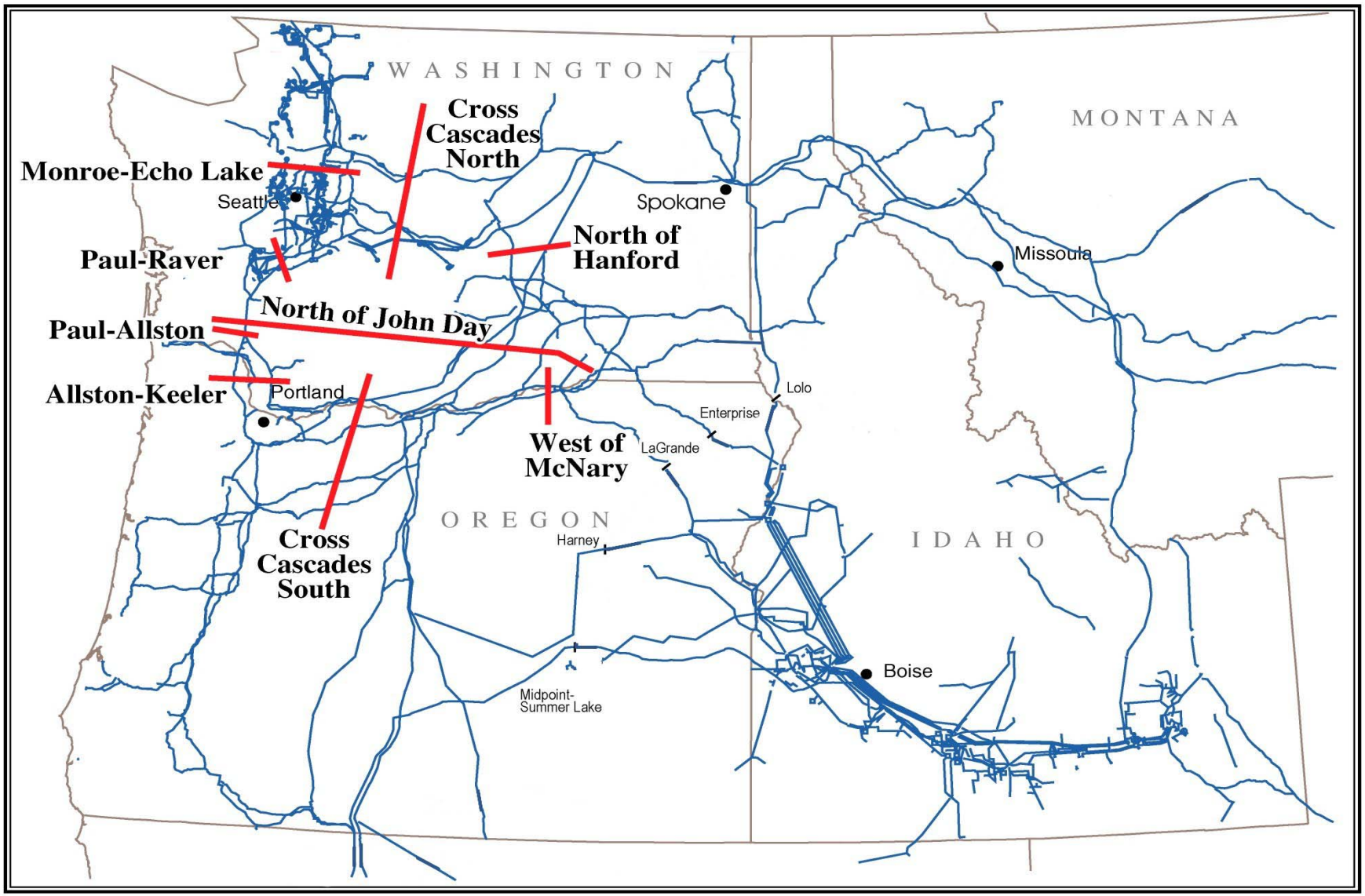
Goal of ATC Methodology

- Optimize use of transmission assets while meeting current and forecasted long-term obligations without significant costs or increased curtailment as compared to historical levels.
- Develop an approach to manage the network that recognizes flows over the interconnected system while eliminating weaknesses inherent in the traditional contract path model.

What is the Problem?

- The BPA network is reaching its physical limitations due to regional load growth, the addition of new generator interconnections and new customers.
- BPA needs to target infrastructure capital and only construct new capacity to alleviate congested paths when absolutely necessary.
- To build infrastructure to eliminate all congestion would be hugely expensive, economically damaging to the region and environmentally irresponsible.

Flowgates of the BPA Transmission Grid

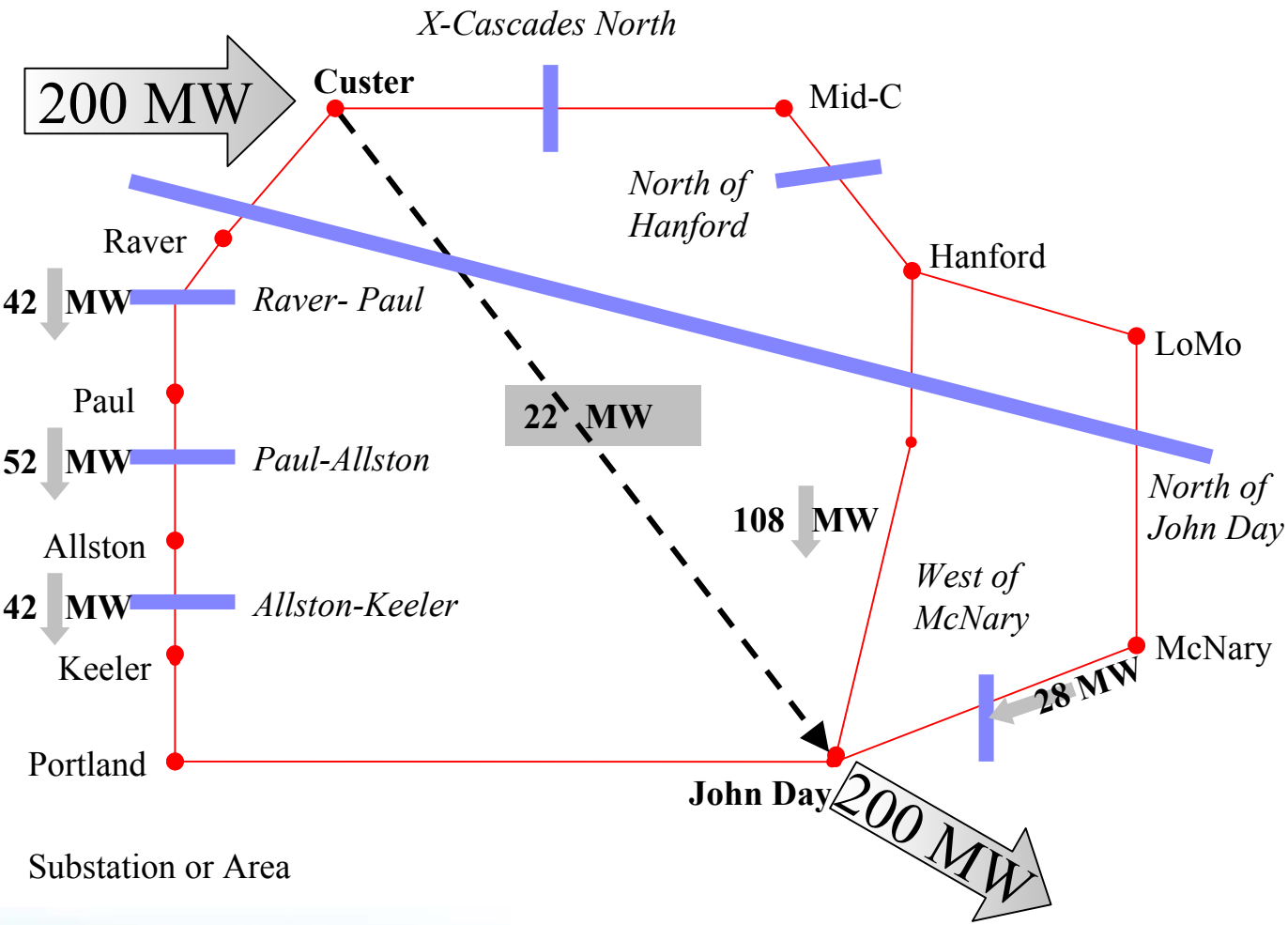


Bonneville Power Administration

ATC Methodology

Depiction of How a Single Transaction Uses Multiple Flowgates on the Internal System

Hypothetical Case: 200 MW Custer to John Day



What are the Potential Risks and Costs?

- While TBL believes that the ATC results are based on conservative assumptions, projections could turn out to be wrong and any new long-term sales may result in a need for unanticipated new transmission facilities.
- While TBL believes that proposed path-specific uses provide for widely flexible dispatch of the federal hydro system to meet firm loads, it is possible abnormal system conditions could occasionally force less than optimum dispatch patterns.
- Major future changes in the hydro system or its operation may require changes in the assumptions for federal project dispatch.
- Frequency of restrictions for existing users utilizing discounted or no-cost interruptible transmission service could increase.

What Are The Benefits of BPA's Proposed Solution?

- Will allow TBL to be responsive to those waiting in the request queue for long-term service.
- Clearer identification of infrastructure needs and non-wire alternatives to reduce or eliminate flowgate constraints.
- Less risk of unneeded infrastructure investment.
- More efficient curtailment and redispatch operations (potential reduction in impacts to overall transmission system).
- Facilitates development of new Tariff-based products that may more fully utilize ATC.

ATC Methodology for Internal Paths

- Combination of traditional planning power flow analysis with a contract accounting system to produce a 20-year monthly ATC for each of nine flowgates.
- Key assumptions of the proposed methodology:
  - Forecasted loads.
  - Generation dispatch patterns.
  - Power utilization factors (PUF) that are used to determine how power flows over specific flow gates.
  - Current contract rights.
  - Establish Transmission Reliability Margin to account for nomograms, load forecast error and inherent modeling uncertainty

Findings and Next Steps

- Phase I (October 2003)
  - Post ATC methodology including Transmission Reliability Margin (TRM) and deadband.
  - Post ATC results for summer 2004 (including Schultz caps and Kangley-Echo Lake) that show transmission system is fully subscribed.
  - New limited long-term firm service may be offered.
- Phase II (December 2003)
  - Expecting new ATC results starting in 2006 due to Coulee-Bell and Schultz-Wautoma projects (200-400 MW).
  - Current and future long-term transmission requests will require additional network upgrades or non-wires solutions.
    - These upgrades require participant funding with credits.